

NINETEENTH REPORT
STANDING COMMITTEE ON ENERGY
(1995-96)

(TENTH LOK SABHA)

DEPARTMENT OF ATOMIC ENERGY

—DEMANDS FOR GRANTS (1994-95)

[Action Taken by the Government on the Recommendations contained in the
9th Report of the Standing Committee on Energy (Tenth Lok Sabha)]



Presented to Lok Sabha on.....
Laid in Rajya Sabha on.....

26 APR 1995

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COMPOSITION OF THE STANDING COMMITTEE ON
ENERGY (1995-96)

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INTRODUCTION

I, the Chairman, Standing Committee on Energy having been authorised by the Committee to submit the Report on their behalf, present this Nineteenth Report (Tenth Lok Sabha) on Action Taken by the Government on the recommendations contained in the 9th Report of the Standing Committee on Energy (Tenth Lok Sabha) on "Demands for Grants (1994-95) of Department of Atomic Energy".

2. The 9th Report of the Standing Committee on Energy was presented to Lok Sabha on 22nd April, 1994. Replies of the Government to all the recommendations contained in the report were received on 4th April, 1994. The Standing Committee on Energy considered and adopted this report at their sitting held on 17th April, 1995.

3. An analysis of the action taken by the Government and the recommendations contained in the 9th Report of the Committee is given in Appendix-II.

NEW DELHI;
April 18, 1995

Vaisakha 28, 1917 (Saka)

JASWANT SINGH,
Chairman,
Standing Committee on Energy.

CHAPTER I

REPORT

The Report of the Committee deals with the action taken by the Government on the recommendations contained in the Ninth Report (Tenth Lok Sabha) of the Standing Committee on Energy on "Department of Atomic Energy—Demands for Grants (1994-95)" which was presented to Lok Sabha on 22nd April, 1994.

2. Action Taken Notes have been received from the Government in respect of all the 9 recommendations contained in Report. These have been categorised as follows:

- (i) *Recommendations/Observations that have been accepted by the Government: Sl. No. 1 (Para No. 1), 2 (Para No. 5), 3 (Para No. 6), 4 (Para No. 9), 6 (Para Nos. 13 & 15), 7 (Para No. 17) and 8 (Para No. 19)*
- (ii) *Recommendations/Observations which the Committee do not desire to pursue in view of the Government's reply: Sl. No. 5 (Para No. 11)*
- (iii) *Recommendations/Observations in respect of which replies of the Government have not been accepted by the Committee:*

-NIL-

- (iv) *Recommendations/Observations in respect of which final replies of the Government are still awaited: Sl. No. 9 (Para No. 21)*

3. The Committee require that final reply in respect of the recommendation for which only interim reply has been given by the Government ought to be furnished to the Committee at the earliest.

4. The Committee will now deal with the action taken by the Government on some of their recommendations:—

A. Measures to improve Plan Performance

(Recommendation Sl. No. 3 – Paragraph No. 6)

5. The Committee were concerned to note that plan expenditure of the Department had been much less than what was budgeted for annually. The Committee observed that the severe setback in plan activities of the Department was presumably due to non-realisation of internal and extra budgetary resources (EBRD) as originally envisaged. The Committee expressed the hope that the

Department will look into the causes for this unsatisfactory plan performance and initiate appropriate remedial measures to implement its plan programmes successfully.

6. The Department in its reply stated that as correctly pointed out by the Committee, the reasons for wide gap between the approved plan outlay and the expenditure during 1992-93 and 1993-94 was mainly the inability of PSUs to raise IEER as originally envisaged and the Department explained the reasons therefor. The reply is however, silent on the recommendations of initiating appropriate remedial measures for successful implementation of plan programmes. The Committee trust that the Department has taken note of this recommendation and initiated suitable measures in this regard.

B. Financial Performance

Recommendation (Sl. No. 9, Paragraph No. 21)

7. The Committee had observed that the financial performance of the atomic power stations left much to be desired and stressed that suitable measures should be adopted to reverse the trend of poor profitability/losses of Atomic Power Stations in order to generate internal resources for future needs. The Department in its reply has given the reasons for poor profitability/losses. The reply however, has not mentioned anything about the steps proposed to be taken to reverse that trend, as desired by the Committee. The Committee await information in this regard.

CHAPTER II

RECOMMENDATIONS/OBSERVATIONS THAT HAVE BEEN ACCEPTED BY THE GOVERNMENT

Recommendation Serial No. 1

The Committee in their first report on the Demands for Grants of the Department of Atomic Energy pertaining to the year 1993-94 had emphasised the aspect of realistic Budget estimates, and had then observed that over-estimates lead to a locking up of utilisable funds, thus in turn depriving other deserving projects/schemes of Budgetary allocations. The Committee's scrutiny of current Demands for Grants and Plan Budget of the Department reveals that the Budget Estimates, under certain heads, continue to reflect the same shortfalls in utilisation/reduction at the stage of Revised Estimates. These are briefly analysed in the current report.

Reply of the Government

It may be mentioned that on account of the principled position taken by the Government with regard to nuclear matters at the international level, the Department faces problems of export restrictions from developed countries with regard to equipment and machinery. This makes it necessary to encourage indigenisation in hi-tech areas with possible delays in supply of equipment and components. It will be appreciated that in many cases, Research and Development activities involve use of certain material and equipment for the first time in the country. Apart from the fact that development of new technology is a time consuming process, it is also submitted that the level of manufacturing technology often requires upgradation so that indigenous material of appropriate quality is made available for the Project/Schemes. R&D activities also involve import of certain critical components, although, there are uncertainties with regard to supply from foreign sources on account of restrictions on imports by the developed countries.

Budget provisions are made with the expectation of overcoming the restrictions or successful indigenisation, but at times there results in shortfalls in expectations. Nevertheless, a review of the expenditure during the last three years indicated in the statement below, show a remarkable improvement on the expenditure side.

While the percentage of utilisation was 85% in 1991-92, it was 90% in 1992-93 and in 1993-94 it is 97.1% of the approved Budget.

(Rs. in Crores)

	1991-92			1992-93			1993-94		
	Budget	Actuals	Percentage Utilisation	Budget	Actuals	Percentage Utilisation	Budget	Approx. Expendr.	Percentage Utilisation
1. Plan	412.14	354.42	86.00	412.00	356.42	86.51	743.00*	723.64	97.40
2. Non-Plan	1108.79	935.51	84.37	1145.53	1042.21	91.02	1315.12	1275.74	97.00
Total	1520.93	1289.93	84.81	1557.53	1399.63	89.83	2058.12	1999.38	97.15

*Includes Supplementary Grant of Rs. 250 crs.

The observation of the Committee regarding the need for realistic Budgeting, systematic implementation of Plan Schemes and utilisation of Budgeted funds are however, noted.

[Department of Atomic Energy No. 1/2(5)/94-Budget,
dated the 4th April, 1994]

Recommendation Serial No. 2

Para 5: It is observed that the Performance Budget of the Department has not brought out the figures regarding actual utilisation of Plan Budget provisions during 1992-93. In the absence of this information, the Committee are unable to comment on the Department's financial performance during 1992-93. The Committee expect that the Performance Budget in future should bring out the details regarding actual utilisation of Budget provisions pertaining to the preceding year to enable the Committee to scrutinise the information. Incidentally, the Performance Budget has shown three different figures regarding actual plan expenditure in 1992-93 without showing sources of funds. At the first page the figures shown is Rs. 969.38 crores, and at page 32 the figure worked out is Rs. 948.57 crores and at p. 33, the figure is Rs. 356.42 crores. The Committee hope that the Department will clarify the position in this regard. However, for the purpose of analysis, the figure of Rs. 969.38 crores is made use of in this report.

Reply of the Government

Incidentally, the Revised Estimates for the year and the Budget Estimates for the ensuing year are assessed after taking into account the expenditure incurred during the first half of the year as well as the actuals of the preceding year. The form prescribed by the Ministry of Finance calling for Budget proposals also provides column only for furnishing the actuals of the previous year. Therefore, in the Performance Budget also approved provisions of the previous year were not being indicated.

As regards the discrepancies pointed by the Committee relating to the actual plan expenditure of 1992-93 shown on pages 1, 32 and 33, it may be mentioned that the figures indicated in Table IV on page 33 relate to the Budgetary Support only (without IEBR), while the figures shown on page-1 and Table-III in Chapter-IV include IEBR also. The total plan expenditure of Rs. 969.38 crores shown on page-1 of Performance Budget and adopted by the Committee for the purpose of analysis as well as the total expenditure of Rs. 356.42 crores out of the Budgetary Support (without IEBR), shown in Table-IV on page-33 are correct. However, due to some typographical error the total expenditure during 1992-93 in Table-III on page-32 was shown as Rs. 948.57 crores and needs to be corrected as Rs. 969.38 crores. The error is regretted.

{Department of Atomic Energy No. 1/2(5)/94-Budget,
dated the 4th April, 1994}

Recommendation Serial No. 3

Para 6: The Committee are concerned to note that plan expenditure of the Department has been much less than what was Budgeted for annually. During 1992-93, the plan expenditure was just around Rs. 969 crores as against the target of Rs. 1278 crores and in 1993-94 the anticipated expenditure is only Rs. 925 crores as against Rs. 1320 crores Budgeted. The severe set back in plan activities of the Department is presumably due to non-realisation of internal and extra Budgetary resources as originally envisaged. The Committee of that the Department will look into the causes for this unsatisfactory plan performance and initiate appropriate remedial measures to implement its plan-programmes successfully.

Reply of the Government

As correctly pointed out by the Committee, the reason for wide gap between the approved Plan Outlay and the expenditure during 1992-93 and 1993-94 is mainly the inability of PSUs to raise Internal and Extra Budgetary Resources as originally envisaged. In this connection it may be mentioned that, while finalising the Plan Budget, the Budgetary Support in respect of PSUs of the Department, when reduced, in order to retain the Plan Outlay, the IEBR was raised to unrealistic levels. Subsequently, invariably the PSUs will not be able to raise the enhanced IEBR. An analysis of the Sector-wise plan expenditure would show that

under R&D and I&M Sectors the anticipated expenditure during 1993-94 is almost close to the plan outlay originally envisaged. Only in the Power Sector there is wide gap between the projected outlay and anticipated plan expenditure during 1993-94, the main reason being that the market borrowings, as envisaged originally, could not materialise due to unfavourable market conditions. In spite of the best efforts, NPCIL could mobilise only Rs. 86 crores of bond money against an approval to raise Rs. 550 crores. Further, the actual realisation from sale of power was inadequate due to defaults on the part of State Electricity Boards.

[Department of Atomic Energy, No. 1/2(5)/94-Budget, dated the 4th April, 1994]

Comments of the Committee

(Please See Paragraph 6 of Chapter 1 of the Report)

Recommendation Serial No. 4

Para 8: The resource allocation position in respect of Nuclear Power Corporation and Nuclear Fuel Complex has been as under:-

(Rs. in crores)

	1992-93			1993-94		
	B.E.	Actual	(-)Shortfall/ (+) Excess	B.E.	R.E.	Difference
Nuclear Power Corporation	587	450	(-)137	641	904	(+)263
Nuclear Fuel Complex	225	196	(-)29	268	198	(-)70

Para 9: The Committee are at a loss to understand the circumstances under which the Nuclear Power Corporation had to surrender from the Budgetary support as much as Rs. 137 crores during 1992-93 particularly when the plan expenditure suffered huge shortfall. Similarly the huge shortfall in Budget utilisation by Nuclear Fuel Complex, Hyderabad every year is disturbing. The Committee had earlier highlighted in their first report the under-utilisation of Budgetary provisions by the Nuclear Fuel Complex. It is hoped that the reasons for poor Budgetary performance of the complex will be gone in detail and realistic Budget Estimates made in future.

Reply of the Government

The surrender of Rs. 137 crores during 1992-93 pointed out by the Committee, does not relate to Nuclear Power Corporation. The programmes indicated under Serial No. 2.5 of Table 1 of page 23 under heading Nuclear Power Corporation includes certain other items of expenditure other than the investment in and loans to NPCIL.

The shortfall of Rs. 137 crores during 1992-93 was mainly under the following items. The reasons for shortfalls are also indicated against each item.

	(Rs. in crores)	Reasons for shortfall
(a) Fuel Inventory	100	Non-receipt of enriched uranium from abroad, as well as less supply of PHWR fuel.
(b) Procurement of heavy water	35	As the production of heavy water by Departmental plants has improved considerably, it was decided not to import heavy water.
(c) Nuclear Power Board	12	The amount meant for settlement of dues on permanent absorption of DAE employees on foreign service with NPCIL could not be utilised because of non finalisation of terms and conditions of service which require negotiations with the employees.
(d) Prototype Fast Breeder Reactor	3	Due to slippage of delivery schedule of certain major equipments.

The above surrender marginally set off by excess expenditure towards investment in NPCIL and interest on heavy water held in stock etc. resulted in a net saving of Rs. 137 crores.

As regards Revised Estimates 93-94 additional provision of Rs. 263 crores is mainly on account of a loan of Rs. 250 crores to NPCIL for which supplementary grant has been obtained and increase in interest charges on heavy water held in stock due to upward revision of interest rate from 10% to 10.3% marginally counter-balanced by reduction in operational expenses in RAPS I.

Further, the shortfall in utilisation of funds by NFC during 1992-93 as compared to Budget Estimates is on two counts about Rs. 19 crores on the

production (revenue) side and about Rs. 10 crores on the project (capital) side. On the production side there was shortfall in achieving the targets originally fixed consequent on the delay in completion of expansion/augmentation programmes which in turn was due to late receipt of imported machinery/equipment. The shortfall in production resulted in corresponding shortfall in utilisation of funds to the extent of Rs. 19 crores. The requirement of fuel by NPCIL was also less than what was originally envisaged.

On the capital side, the financial sanction for the new projects could be issued (after obtaining requisite clearances from various agencies) only by August 1992. Consequently certain items of work could not be started as originally planned and this resulted in a shortfall in expenditure to the extent of about Rs. 10 crores.

During 1993-94, there was a shortfall in production due to certain technical/process difficulties and accordingly the demand for funds on the revenue side was reduced to the extent of Rs. 28 crores. On the capital side, due to slow-down of the nuclear power programme as a result of financial crunch, implementation of the three newly sanctioned projects (New Uranium Oxide Fuel Project, New Uranium Fuel Assembly Plant & New Zircaloy Fabrication Plant) was rephased and only about 50% of the capacities are being added in the first phase. This has resulted in a reduction in the requirement of funds to the extent of about Rs. 42 crores.

The first phase of the projects will be in advanced stage of completion during 94-95 and higher outlays have been sought for this in BE 94-95.

[Department of Atomic Energy No. 1/2(5)/94-Budget,
dated the 4th April, 1995]

Recommendation Serial No. 6

Research and Development

Para 12: The main research and development units of the Department are the Bhabha Atomic Research Centre, Bombay, Variable Energy Cyclotron Centre, Calcutta, Centre for Advanced Technology, Indore, Indira Gandhi Centre for Atomic research, Kalpakkam, Atomic Minerals Division, Hyderabad and six aided institutions. The break-up of plan outlay for R&D during the 8th plan and its utilisation during the first three years of the plan are shown in Appendix II.

It can be observed that the actual R&D expenditure during 1992-93 under plan schemes fell short of the anticipation by Rs. 17 crores. This reflects slow pace of R&D activity in general. As an illustration, the case of Indira Gandhi Centre for Atomic Research is dealt with in the succeeding paragraph.

Indira Gandhi Centre for Atomic Research

The prime objective of the centre is to create a sound base to set up and operate Fast Breeder Nuclear Power plants indigenously. The plan outlay for Research and Development programme of this centre during the 8th plan and its utilisation during the first three years of the plan is as under:

(Rs. in crores)

	8th Plan 92-97	1992-93		1993-94		1994-95
		B.E.	Act	B.E.	R.E.	B.E.
Continuing Schemes	25.07	7.08	5.18	5.05	6.66	5.69
New Schemes	49.53	1.13	0.21	4.95	3.44	6.31
	74.60	8.21	5.39	10.00	10.10	12.00

It can be observed from the above table that the R&D expenditure of the Indira Gandhi Centre for Atomic Research under plan schemes during the first three years of the plan amounts to only Rs. 27 crores as compared to an outlay of Rs. 75 crores during the 8th five year plan. The reasons for slow progress in R&D activity of the centre are not known. The Committee trust that the centre will step up its R&D activities and will achieve the desired results as planned.

Reply of the Government

The financial performance of the Research and Development Sector has considerably improved during the year 1993-94. As against the approved outlay of Rs. 118 crores, the expenditure is of the order of Rs. 115 crores (approx).

The shortfall in expenditure during 1992-93 under Research and Development Sector is in respect of the following Units:

(Rs. in crores)

BARC	3.76
IGCAR	2.82
AMD	2.18
TIFR	1.93
HOUSING	3.49
OTHERS	2.82
	<u>17.00</u>

The main reason for shortfall is slippage in delivery schedules of equipment, delay in taking up housing projects at various places, slow progress of construction work etc.

As regards slow progress in R&D activities of IGCAR, it may be mentioned that out of the total VIII Plan outlay of Rs. 25 crores for Continuing Schemes of IGCAR, the anticipated expenditure at the end of the first three years of the plan period is approximately Rs. 15.53 crores *i.e.* an average expenditure of Rs. 5 crores per year. This appears to be in proportion to the approved outlay for continuing schemes.

With regard to new schemes it is submitted that as the VIII Five Year Plan proposals were finalised only in the middle of 1992, it took some time thereafter for plan projects to be undertaken under the VIII Plan for finalisation and getting sanctioned with the result expenditure could not be progressed during the initial years of the VIII Plan. It is expected that progress of the works will gather momentum during the remaining years of the VIII Plan.

[Department of Atomic Energy. No. 1/2(5)/94-Budget,
dated the 4th April, 1995]

Recommendation Serial No. 7

Operating Performance

Para 16: The physical performance of Atomic Power Stations in generating power has been as indicated below:

Atomic Power Station	1992-93		1993-94		1993-94
	Target	Anticipated	Target	Anticipated	Target
Tarapur	2072	1649	1770	1770	1770
Rajasthan					
Unit-I	—	271	402	161	393
Unit-II	1061	977	1000	830	1050
Madras	1770	1794	1945	1900	1900
Narora	1941	1556	2420	702	2035
Kakrapar	—	—	965	750	1705

Para 17: The Committee note that the Performance Budgets of the Department of Atomic Energy bring out physical performance of atomic power stations only with reference to anticipations and not as actually achieved on any particular year. It is not possible to make any meaningful assessment about the physical performance of atomic power stations in the absence of information regarding actual achievement. Even a scrutiny of anticipated achievements reveals huge shortfalls in target realisations during the year 1992-93 and 1993-94 particularly

in Narora and Unit-II of Rajasthan Atomic Power Stations. Tarapur unit also fared badly during 1992-93. The Committee would like to know the reasons for this poor performance and the measures taken to improve the functioning of the units.

Reply of the Government

Details of generation actually achieved in 1992-93 and 1993-94 (up to February 94 actual & March 94 provisional) are given in Tables-1&2 respectively. Explanations with regard to shortfalls have been given in the "Remarks" column. The observation in regard to incorporating actual generation data in the performance budget document is noted for compliance in future. Achievement data for the year prior to the year of performance budget under consideration can only be "anticipated" values as the performance budget is prepared in December, and actual achievement figure can be indicated in April during review by the Standing Committee of the Parliament. However, actual achievement for the preceding year will be indicated for comparison.

During 1992-93, based on actual achievements, shortfalls in generation from Tarapur station, Rajasthan Unit-2, and Narora station were marginal amounting to 6.6%, 12.8% and 8.9% respectively as compared to the targets. Reasons for shortfalls have been explained in the Table-1.

During 1993-94, based on actual generation (actual up to February 1994 and provisional for March 1994), Tarapur station, and Rajasthan Unit-2 exceeded the targets. The reasons for shortfalls in generation from Madras, Narora and Kakrapar stations have been explained in the Table-2.

The performance of Rajasthan Unit-1 was affected in both the years due to a minor but difficult leak of heavy water from over Pressure Relief Device mounted on the calandria. Operation of the Unit in a modified mode on account of the above leak required detailed analysis and regulatory review and renewals. A long-term solution for repair is being worked out. It requires time due to the inaccessibility of the area and the need for special tooling.

During these years, the frequency of the electrical grid varied much beyond the permitted operating limits of turbo-generators especially in Madras and Narora resulting in separation/trip of the unit from the grid during periods off-normal grid frequency conditions. Operation of the turbo-generators beyond permitted range can lead to turbine blade failures as had happened at Narora and Madras. The grid frequency situation continues to be unsatisfactory.

All efforts are being made for improving the generating performance by strengthening the preventive and productive maintenance, outage planning, and condition monitoring of equipment.

TABLE 1.

Physical Performance of Atomic Power Stations 1992-93
[Generation in Million Units (MUs)]

Atomic Power Station	1992-93			Remarks
	Target	Anticipated	Actual	
Tarapur-1&2	2072	1649	1935	Marginal shortfall of 6.6% mainly due to an unforeseen outage for about two months to solve emergency condenser tube leak and low condenser vacuum in Unit-2.
Rajasthan-2	1061	977	925	Marginal shortfall of 12.8% mainly due to planned maintenance outage extending from 2 to about 3.5 months for enhanced inservice inspection of coolant channels & chemical decontamination.
Madras-1&2	1770	1794	1978	Achievement exceeded target.
Narora-1&2	1941	1556	1768*	Marginal shortfall of 8.9% mainly due to an outage of about 4 months in the year for generator rotor replacement & repair of lacing rod failure in the Unit-2 turbine. Unit-2 targets are based commercial generation from April 1992 as compared to actual July 1992.
Total	6844		6606	
Rajasthan	-	271	133	Performance affected due to a long outage of about six months due to a minor but difficult (from accessibility) leak of moderator heavy water into calandria vault from the Over Pressure Relief Device (OPRD) mounted on calandria.

TABLE 2

Physical Performance of Atomic Power Stations 1993-94
[Generation in Million Units (MUs)]

Atomic Power Station	1993-94			Remarks
	Target	Anticipated	Actual [@]	
Tarapur-1&2	1770	1770	1823	Achievement exceeded target. Slight reduction in achievement as compared to 1992-93 due to extension of Unit-2 refuelling outage for extra maintenance jobs.
Rajasthan-2	1000	830	1092	Achievement exceeded the target. Better performance as compared to 1992-93.
Madras-1&2	1945	1900	1387	Performance affected due to a long outage of about 7 months for turbine LP rotor modifications consequent on the Narora fire incident. Inservice inspection of coolant channels & chemical decontamination were also carried out.
Narora-1&2	2420	702	334	Unit-1 out of service for the entire year after the fire incident. Unit-2 came back on-line only in Nov. 93 after rehabilitation work & modifications based on lessons learnt from Narora fire incident.
Kakrapar-1	965	750	656*	Unit commenced commercial generation in May 93 as against April 93. Initial regulatory power limitation (75%), outage for turbine inspection & modification from lessons of Narora fire incident.
Total	8100		5292	
Rajasthan-1	402	161	163	Continuation of the problem with the OPRD.

[Department of Atomic Energy No. 1/2(5)/94-Budget,
dated the 4th April, 1994]

[@]Based on actuals up to Feb. 94 & provisional figures for Mar. 94 Includes 35 MUs of infirm power from Apr. 1 to May 5, 1993.

Recommendation Serial No. 8**Major Power Projects**

Para 18: There are three major power projects which are under execution. The original estimated cost, revised cost, total expenditure incurred and expected year of commissioning in respect of these projects are given below:

(Rs. in crores)				
	Original Cost	Revised Cost	Expen- diture incurred	Commissioning
1. Kakrapar Atomic Power Projects (2 units)	381	1335	1200	Unit-I May, 1993 Unit-II expected shortly.
2. Rajasthan Atomic Power Projects (III & IV)	712	2107	788	1996-97
3. Kaiga Atomic Power Projects (2 units)	731	2275	995	1996-97

Para 19: It can be observed that there has been very great cost over-runs, going upto as much as 300%. The extent of delay, in the execution of those projects in respect of these projects is not explained in detail. In the absence of that information in the Performance Budget, the Committee feel that the loss of benefits to the economy owing to time and cost over-run of projects cannot be overestimated. The Committee expect that efforts will be made to ensure timely completion of these projects within the revised costs.

Reply of the Government**I. Cost Overrun**

The cost overruns in all the projects referred to were mainly attributed to the following factors apart from taxes and duties, FE rate variation and effect of devaluation etc. The effects of these factors for each of the project is summarised in the Table (see on page 15).

(a) Change in Scope of Work

The scope of work in each of the project has increased due to the evolving safety requirements and continued technology evolution to conform to prevalent safety standards.

(b) Escalation

While preparing the original cost estimate, a provision of only 4% per year was provided towards escalation with a project implementation time of about 8 years. Hence the total provision for future escalation was of the order of only 15% of the total cost estimate. The quantum of escalation provided did not fully compensate the actual escalations that have occurred in subsequent years. Time overruns also contributed to some increased escalation.

(c) Interest during Construction (IDC)

Subsequent to the formation of Nuclear Power Corporation in 1987, it became necessary to include the Interest During Construction (IDC) to the capital cost of the project. IDC was estimated on the assumption of 2:1 debt equity ratio.

Based on the above the project-wise data is given below:—

	(Rs. in crores)					
	Original estimated cost	Change in Scope of work	Cost increase due to escalation	IDC	Other reasons	Revised estimated cost
Kakrapar Project (2 units)	382.52	183.52	359.62	310	99.34	1335
Rajasthan Project Units 3&4	711.56	137.37	386.75	657	214.32	2107
Kaiga Project (2 units)	730.72	144.91	430.70	685	283.67	2275

All efforts are being made to complete the project as per the revised estimated costs.

II. Time Overruns**(a) Kakrapar Atomic Power Project**

When the project was sanctioned, the original schedule of completion was December 1990 (Unit-1) and December 1991 (Unit-2). In spite of the increase in quantum of work due to the changes in the designs in KAPP based on the experiences during construction and commissioning of NAPP, implementation of recommendations arising out of Three Mile Island (TMI) accident in USA and delays in supply of certain piping hardware, instrumentation items and piping and electrical works contractors not able to meet the schedule, the first unit was commissioned in September 1992 and the time in setting up of this unit is

significantly less as compared to the earlier projects as it has been completed within a period of 8 years from the date of the first pour of concrete for the Reactor Building raft.

Unit-2 is in advanced stages of commissioning and the expected date of criticality is May 1994 and every effort is being put to achieve this date.

(b) Rajasthan Atomic Power Project 3&4

At the time of sanction, date of commissioning of Unit-3 was May 1995 and for Unit-4 was November 1995.

The main plant civil works contract could be awarded only in July 1988 as against the target of November 1987. After the main plant civil works commenced, due to evolving regulatory requirements, a new set of guidelines had to be followed which needed significant analysis and evaluation of the design. Therefore there was delay in taking up the foundation raft concreting work of the project. This delayed the civil works in the beginning. Added to this, delays were also on account of non-availability of diesel and other required inputs during the Gulf crisis of 1990 apart from cash flow problems of the main plant civil contractor. The above resulted in shifting of the original targeted dates by 18 months in the project schedule and the present completion dates for criticality are scheduled to be November 1996 (Unit-3) and May 1997 (Unit-4).

(c) Kaiga Project 1&2

At the time of the sanction for Kaiga Project, the completion dates were June 1995 for Unit-1 and December 1995 for Unit-2. After the main plant civil works were taken up, there was delay in commencing Reactor Building foundation raft concreting due to the same reason as mentioned for Rajasthan Units 3 and 4 referred above. The foundation raft work continued in phases. This resulted in an accumulated delay of 12 months for further works of the Project in comparison to original schedule.

All out efforts are being made to contain this delay by changes in the erection logics and using better construction techniques. The revised scheduled completion of these two units are June 1996 and December 1996 for Units 1 and 2 respectively.

[Department of Atomic Energy, No. 1/2(5)/94-Budget, dated the 4th April, 1994]

CHAPTER III

RECOMMENDATIONS/OBSERVATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE GOVERNMENTS REPLIES

Recommendation Serial No. 5

Atomic Minerals Division, Hyderabad

Para 10: AMD is engaged in survey and prospecting for uranium, thorium etc. for attaining self sufficiency in meeting the demands of the country's nuclear power programme. During the 8th Five Year Plan period target of identifying additional resources of 5000 tons of uranium has been set. A total expenditure of Rs. 31.89 crores is envisaged for AMD during 1994-95 as against RE of Rs. 32.07 crs. for 1993-94. The physical targets and achievements for some selected items during the year 1993-94 and targets for 1994-95 are given below:

	1993-94		1994-95
	Target	Achievement	Target
Airborne Survey (Sq. Km.)	38500	*	35000
Departmental Drilling (M)	52300	34180	42300
Detailed Survey (Sq. Km.)	588	440	533
Geochemical Investigations (Sq. Km.)	11250	10520	11400

* This could not be taken up due to non-availability of aircraft during the flying season.

Para 11: The Committee are surprised to learn from the Performance Budget of the Department that no airborne survey was undertaken by the Atomic Minerals Division on the ground of non-availability of aircraft though it had been targeted to survey 38,500 Sq. Km. during 1993-94. The reason advanced for this failure is hardly convincing. The Committee also note that there were shortfalls in Departmental drilling and detailed survey to the extent of around 35% and 25% respectively in 1993-94. The Committee hope that AMD will analyse the reasons for the huge shortfalls in achieving the targets during 1993-94 and improve its performance in future.

Reply of the Government

At the time of furnishing information by Atomic Minerals Division for preparation of Performance Budget, there were uncertainties regarding availability

of aircraft for Airborne Survey. Subsequently they succeeded in getting aircraft and an area of 39500 sq. km. has been surveyed achieving, before close of the financial year, the set target.

As regards drilling operation, due to shifting of operation to areas in Andhra Pradesh/Rajasthan where comparatively higher grade of ores were located, some short fall in drilling operation had taken place. However, shifting rigs to richer area has compensated the loss by drilling in richer ore areas. Further, while in the Geo-chemical Investigations the Unit has almost achieved the target, there has been a marginal short fall in detailed survey due to difficult terrain region in Himalayas and logistic problems in the areas where detailed survey is conducted.

[Department of Atomic Energy, No. 1/2(5)/94-Budget,
dated the 4th April, 1994]

CHAPTER IV

**RECOMMENDATIONS/OBSERVATIONS IN RESPECT OF WHICH
REPLIES OF THE GOVERNMENT HAVE NOT BEEN ACCEPTED BY
THE COMMITTEE**

-NIL-

CHAPTER V

RECOMMENDATIONS/OBSERVATIONS IN RESPECT OF WHICH FINAL REPLIES OF GOVERNMENT ARE STILL AWAITED

Recommendation Serial No. 9

Financial Performance

Para 20: The net profit anticipated by Atomic Power Stations during 1992-93 against budget targets and the net profit budgeted for 1994-95 are shown below:

(Rs. in crores)

Atomic Power Station	1992-93		1993-94		1993-94
	Target	Anticipated	Target	Anticipated	Target
Tarapur	12.46	1.47	5.20	3.70	0.66
Rajasthan					
Unit-I	(-) 57.46	(-) 44.19	(-) 13.25	(-) 61.34	(-) 59.85
Unit-II	(-) 3.09	6.18	3.75	2.97	10.25
Madras	(-) 1.18	(-) 2.83	7.30	0.59	0.77
Narora	23.60	7.18	70.28	(-) 109.02	28.86
Kakrapar	-	-	37.47	3.47	56.40

Para 21: The financial performance of the atomic power stations leaves much to be desired. While the profits anticipated by TAPS, MAPS and KAPS were far less than the original projections, the loss likely to be incurred by RAPS Unit-I is much higher than envisaged for the year 1993-94. In the case of Narora unit, whereas the loss in 1993-94 is attributed to the fire incident, the reasons for steep decline in its anticipated profit during 1992-93 are not explained. The Committee would stress that suitable measures should be adopted to reverse the trend of poor profitability/losses of Atomic Power Stations in order to generate internal resources for future needs.

Reply of the Government

The Statements of Profit and Loss for the years 1992-93 and 1993-94 are given in Table-3 and Table-4 respectively. Reasons for variations in the net profit compared to the target for 1992-93 and 1993-94 are given in the "Remarks" column of the respective statements.

It may be highlighted that all the Atomic Power Stations of Nuclear Power Corporation except Rajasthan Unit-II had far exceeded the profit targets during the year 1992-93. Even Narora had exceeded the anticipated profit during 1992-93 due to higher generation achieved by the units during the year. Rajasthan Unit-II had suffered a loss of Rs. 3.46 crores during 1992-93 mainly due to lower generation on account of longer outage of the unit for inservice inspection of coolant channels. Rajasthan Unit-I (owned by the Department of Atomic Energy) had suffered losses due to the lower generation level achieved during 1992-93 for reasons stated in para "Operating Performance". The techno-economic viability of operating Rajasthan Unit-I is under evaluation.

During the year 1993-94, Tarapur Unit I & II had exceeded the targeted profit by Rs. 9.91 crores whereas there is a reduction in the profit for Rajasthan Unit-II by Rs. 3.21 crores mainly because of the delay in tariff revision for want of CEA clearance. Madras Unit I & II, Narora Unit I & II and Kakrapar Unit-I suffered losses during 1993-94 due to lower generation achieved for reasons stated in para "Operating Performance".

TABLE 3

Statement of Profit & Loss
(Profit/Loss in Crores)

Station	1992-93		Remarks
	Target	Anticipated Actuals	
TAPS	12.46	1.47 16.62	Profit exceeded the target. Reasons for variation are: (i) Accounting of Delayed Payment Charges-Rs. 3.05 Crores. (ii) Savings in O & M Expenses.
RAPS-II	-3.09	6.18 -3.46	The loss was due to: (i) Lower generation as compared to the target due to the reasons given in Table 1. (ii) Proposed Tariff Revision not effected during 1992-93.

Station	1992-93		Remarks
	Target	Anticipated Actuals	
MAPS	-1.18	-2.83 16.15	Profit exceeded the target Reasons for variation are: (i) Higher generation as compared to the target. (ii) Savings in O & M Expenses.
NAPS	23.60	7.18 56.66	Profit exceeded the target, Reasons for variation are: (i) Higher generation from NAPS II after commencement of commercial operation. (ii) Accounting of Delayed Payment Charges- Rs. 27.42 Crores.
Total	31.79	12.00 85.97	
RAPS I	-57.46	-44.19 -55.91	Marginal reduction in loss was mainly due to the savings made in O & M Expenses during 1992-93.

TABLE 4

Statement of Profit & Loss
(Profit/Loss in Crores)

Station	1992-93		Remarks
	Target	Anticipated Actuals Provisional	
TAPS	5.20	3.57 15.11	Profit exceeded the target, Reasons for variation are: (i) Higher generation as compared to the target. (ii) Accounting of Delayed Payment Charges Rs. 5.32 Crores. (iii) Tariff revision effected during 1993-94.

Station	1992-93			Remarks
	Target	Anticipated	Actuals Provisional	
RAPS-II	3.75	2.97	0.54	Reduction in profit was mainly because the proposed Tariff revision was not effected during 1993-94.
MAPS	7.30	0.59	-29.52	The loss was due to: Lower generation as compared to the target due to the reasons given in Table-2.
NAPS	70.28	-109.02	-93.36	The loss was due to: Lower generation as compared to the target due to the reasons given in Table-2.
KAPS	7.49	3.47	-25.81	The loss was due to: Lower generation as compared to the target due to the reasons given in Table-2.
Total	124.02	-98.42	-133.04	
RAPS I	-43.25	-61.34	-25.95	Reduction in loss was mainly due to the accounting adjustments carried out during 1993-94 for the excess O & M expenses claimed in previous years.

[Department of Atomic Energy No. 1/2(5)/94-Budget,
dated the 4th April, 1994]

Comments of the Committee

(Please See paragraph 7 of Chapter I of the Report)

NEW DELHI;
April 18, 1995
Chaitra 28, 1917 (Saka)

JASWANT SINGH,
Chairman,
Standing Committee on Energy.

APPENDIX I

MINUTES OF FIRST SITTING OF STANDING COMMITTEE ON ENERGY (1995-96) HELD ON MONDAY, THE 17TH APRIL, 1995

The Committee sat from 11.00 hrs. to 13.30 hrs.

PRESENT

1. Shri Shiv Charan Mathur – *In the Chair*
2. Smt. Lovely Anand
3. Shri Anil Basu
4. Smt. Dil Kumari Bhandari
5. Shri Dalbir Singh
6. Shri Keshari Lal
7. Shri Rajesh Kumar
8. Shri Venkateswara D. Rao
9. Shri K.P. Reddaiah Yadav
10. Shri Haradhan Roy
11. Shri Khelsai Singh
12. Shri Laxminarain Tripathi
13. Shri Shankersinh Vaghela
14. Prof. Rita Verma
15. Shri Virender Singh
16. Shri Vijay Kumar Yadav
17. Shri Parmeshwar Kumar Aggarwalla
18. Shri M.M. Hashim
19. Shri Bhubneswar Kalita
20. Shri Dipankar Mukherjee
21. Smt. Ila Panda
22. Shri J.S. Raju
23. Shri Venkatram Reddy
24. Shri Viren J. Shah

SECRETARIAT

1. Shri G.R. Juneja – *Deputy Secretary*
2. Shri A. Louis Martin – *Under Secretary*

2. In the absence of Chairman, the Committee chose Shri Shiv Charan Mathur to act as Chairman for the sitting under Rule 258(3) of the Rules of Procedure and conduct of Business in Lok Sabha.

** ** *

5. Then the Committee considered and adopted the following draft action taken reports:-

** ** *

- (iv) Action Taken by the Government on the recommendations contained in the 9th Report of Standing Committee on Energy on "Department of Atomic Energy-Demands for Grants (1994-95)".

The Committee also authorised the Chairman to finalised above mentioned reports and present the same to Parliament.

** ** *

The Committee then adjourned.

**** Paras 3, 4, 5 (i), (ii) and (iii) and 6 of the Minutes relating to procedural matters, consideration of three other Action Taken Reports and consideration of Draft Reports on Demands for Grants of Ministry of Coal and Ministry of Non-conventional Energy Sources are not included.

APPENDIX II

(*vide* Para 3 of Introduction)

Analysis of Action Taken by Government on the recommendations contained in the 9th Report of the Standing Committee on Energy (Tenth Lok Sabha).

I. Total No. of recommendations made	9
II. Recommendations that have been accepted by the Government (<i>vide</i> recommendations at Sl. Nos. 1,2,3,4,6,7 and 8).	7
Percentage of total	77.7%
III. Recommendations which the Committee do not desire to pursue in view of the Government's replies (<i>vide</i> recommendation at Sl. No. 5).	1
Percentage of total	11.1%
IV. Recommendations in respect of which replies of the Government have not been accepted by the Committee.	Nil
V. Recommendations in respect of which final replies of the Government are still awaited (<i>vide</i> recommendation at Sl. No. 9).	1
Percentage of total	11.1%